UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,064	08/26/2003	Jean R. Chang	TUC920030104US1	2937

45216 7590 04/16/2009

Kunzler & McKenzie
8 EAST BROADWAY
SUITE 600
SALT LAKE CITY, UT 84111

EXAMINER	
MYINT, DENNIS Y	
ART UNIT	PAPER NUMBER
2162	

MAIL DATE	DELIVERY MODE
04/16/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/648064
Filing Date: August 26, 2003
Appellant(s): Jean R. Chang et al.,

Brian C. Kunzler

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on July 9, 2008 appealing from the Office action mailed February 2, 2008 and in response to the after-final amendment dated 04/21/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences, which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is not correct. After further consideration, after-final amendment dated 04/21/2008 has been entered.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejections to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct. Appellant did not address 35 U.S.C. 101 rejection, but is now moot since the

rejection has been withdrawn after reconsideration and entry of the after-final amendment dated 04/21/2008.

Grounds of Rejection Withdrawn

35 U.S.C. 101 rejection has been withdrawn.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,018,060	Gelb et. al.,	5-1991
5,757,571	Basham et. al.,	5-1998
2003/0193994	Stickler	10-2003
2003/0204672	Bergsten	10-2003

NPL: *Proceedings of the 24th VLDB Conference, New York, USA, 1998,* Erik Riedel, Garth Gibson and Christos Faloutsos, "*Active Storage for Large-Scale Data Mining and Multimedia*"

2003/0120379	Mehlberg et al.,	6-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 1, 4-5, 15-20, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gelb et al., (hereinafter "Gelb", U.S. Patent Number 5018060) in view of Basham et al. (hereinafter "Basham", U.S. Patent Number 5757571) and further in view of Stickler (U.S. Patent Application Publication Number 2003/0193994).

Referring to claim 1, Gelb et al. is directed to a system and method for selecting storage media to improve data access performance and teaches the limitations:

"a reception module implemented in software for execution on a processor and configured to receive a dataset for storage on a magnetic tape storage medium" (Gelb,

Figure 4: *Data Facility Product 32, Peripheral Data Storage 12;* Gelb, Column 18 Line 47 through Column 19 Line 59; Gelb, Column 12 Lines 64 through Column 13 Lines 15-23; and Column 16 Lines 65-68) "with a storage instruction that does not direct that the dataset is stored with scaling" (Gelb, Column 13 Lines 19-22, i.e., */*EXCLUDE SYSTEM DATA SETS THAT SHOULD NOT BE SMS-MANAGED;* Gelb, Column 19, Lines 1-10, i.e., *One of the options in the storage class selection machine process, as indicated by arrow 143, is to assign the allocation to a* ***"non-SMS managed"*** *portion of the data processing system. That is, the storage management system (SMS) which uses the storage and management classes is not to manage the data set which is the subject of the current class selection request. This exclusion process is at the comment "define non SMS-managed data sets" within the listing STORAGE CLASS ACS ROUTINE. In the example, the system data sets (SYS.**) having a DSN including the exclusion parameter for being directed away from the controls of the present invention is based upon parsing the DSN. Therefore, data classes are selectable for data sets to be managed by operation of the present invention or with other types of controls;* Particularly not that "non-SMS managed" option defines that the dataset being selected is not to be scaled, that is, not directing that the dataset is stored with scaling); and

"an identification module implemented in software for execution on a processor and configured to identify storage characteristics of the dataset" wherein the storage characteristics comprise expiration dates" (Gelb, Figure 4: *Data Facility Product 32 and* Gelb, Column 19 Lines 16-39, i.e. *The parameters in MGMTCLAS ACS ROUTINE are compared with the received data set parameters for determining a best comparison*

which indicates which of the management classes listed above is selected for the data set; Gelb Column 6 Lines 41-56, i.e., *A data class specifies data set logical attributes, such as data set type, record length, data storage space requirements in terms of logical bytes not in terms of physical storage space requirements,* ***expiration and retention dates*** *for the data set and any Virtual Storage Access Method (VSAM) data set options*); and

"that indicate (scaling) is beneficial (Gelb, Column 3 Line 65 through Column 4 Line 11, i.e., *The patent does teach the concept of a group of storage volumes (virtual volumes in the tape library) which are scanned for finding a best suitable storage volume for storing a data set to be stored*) "; and

"the storage controller stores the dataset on a magnetic tape storage in response to the scaling storage instruction" (Gelb, Column 16 Lines 60 through Column 17 Lines 40, i.e., *Operators hand carry* ***tape reels*** *(volumes) between* ***storage unit(s)*** *50 and tape drives of tape subsystem(s) 48 and 49. An automatic data media library (tape o disk) 55 may also be included in peripheral data storage 12;* and Gelb, Figure 5 and Figure 6; Gelb, Column 7 Lines 1-35, i.e., *The column headings; RECFM--record format; LRECL--logical record length; AVGREC --****scale factor for data storing space*** *(i.e. megabyte (MB), kilobyte (KB) or other units of space)*). Gelb teaches a storing module (Gelb, Figure 4: *Data Facility Product 32*) which stores the data set on a storage medium (Gelb, *Figure 4: Peripheral Data Storage 12*) according to the storage characteristics of the data set (i.e. *received data set parameters*).

Gelb does not explicitly disclose the limitation: "a scaling module implemented in software for execution on a processor and configured to select a scaling storage instruction in response to storage criteria applied to the storage characteristics and communicate the selected scaling instructions to a storage controller, wherein the scaling storage instruction comprises an instruction to scale the magnetic tape storage medium to a predetermined capacity for optimal data access performance" and "wherein storage characteristics comprise compaction and media interchange specifications".

On the other hand, Basham teaches the limitation:

"a scaling module configured to select a storage scaling instruction in response to storage criteria applied to the storage characteristics communicate the selected scaling instructions to a storage controller, wherein the storage instruction comprises an instruction to scale the magnetic tape storage medium to a predetermined capacity for optimal data access performance" (Basham, Column 3 Lines 68-61, Column 11 Lines 25-30, Basham, Column 14 Lines 38-43, Column 14 Line 64 through Column 15 Line 6, and Column 15 Lines 16-39. Particularly note Column 3 Lines 68-61 which recites that *Until the tape is filled, future data may be stored by creating additional partitions as described above, each partition having a variable size appropriate to the amount of data stored therein;* Basham, Column 11 Lines 25-30 which recites that *an application may require assorted sizes of fixed-size partitions, each partition including one or more adjacent segments, as required by the application; and* Basham, Column 11 Lines 33-36 which recites that *As an example, partition sizes may be established by receiving*

user input (now shown) prior to tasks 502 and 604) and ""wherein storage characteristics comprise compaction" (Basham et al., Column 5 Lines 55-64, i.e., *The controller 204 manages the exchange of user data between the tape medium 206 and the host 202. The controller 204 also handles other tasks associated with storage and retrieval of user data, such as formatting, error checking,* ***compaction****, and other tasks that may be advantageously invisible to the host 202.*).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the apparatus of Gelb to add the feature of storage medium scaling as taught by Basham et al., to the apparatus of Gelb for selecting storage media to improve data access performance so that the resultant apparatus would constitute an apparatus for selecting storage media scaling to improve data access performance, wherein the storing module (Gelb, Figure 4: *Data Facility Product 32*) would be performing the functions of the reception module, identification module, and scaling module of the claimed invention. One would have been motivated to do so in order to *more efficiently and conveniently locate, read, write, and update data stored on magnetic tape media* (Basham, Column 2, Line 47-49).

Gelb in view of Basham does not explicitly teach the limitation: "media interchange specifications".

On the other hand, Stickler teaches the limitation:

"media interchange specifications" (Stickler, Paragraph 1024, i.e., *the Generalized Media Archive (GMA) specification defines a serialization for MARS property value sets based on XML which is suitable for both* ***data interchange*** *as well*

***as persistent storage**, and provides a DTD and other mechanisms for validation and processing*).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the apparatus of Gelb in view of Basham to add the feature of employing media interchange specifications as taught by Stickler to the apparatus of Gelb in view Basham so that the resultant apparatus comprise media interchange specifications in the storage characteristics. One would have been motivated to do so in order to transfer data in accordance with a pre-determined common standards (Stickler Paragraph 0007).

Referring to claim 4, Gelb in view of Basham and further in view of Stickler teaches the limitation:

"further comprising a determination module implemented in software for execution on a processor and (Gelb, Figure 4: *Data Facility Product 32*) configured to store a plurality of predefined storage criteria and compare the storage characteristics of the received dataset with the predefined storage criteria to determine the storage instruction" (Gelb, Column 12 Lines 43-61, i.e., *storage classes* and", and Column 18 Line 47 through Column 19 Line 15, i.e., *compare the information*).

Referring to claim 5, Gelb in view of Basham and further in view of Stickler teaches the limitation:

"further comprising a mapping module implemented in software for execution on a processor (Gelb, Figure 4: *Data Facility Product 32*) configured to track capacity information for the storage medium that stores the dataset (Basham, Column 13 Lines 43-67, i.e., *automated padding*). Note that the system of Basham tracks the capacity of the storage medium and such feature could be combined into the *Data Facility Product* of the system of Gelb.

Claim 15 is essentially the same as claim 4 except that it set forth the claimed invention as a computer readable storage medium to carry out a method for selecting storage medium scaling to improve data access performance rather than an apparatus for selecting storage media scaling to improve data access performance and rejected for the same reasons as applied hereinabove (Gelb, Column 4 Lines 25-27, i.e., (*Machine-effected method of the invention, ….*). Claim 4 incorporates all the limitations of claim 1.

Referring claim 16 Gelb in view of Basham and further in view of Stickler teaches the limitation:

"wherein the method further comprises defining a plurality of storage characteristics as storage characteristics that require on optimally scaled magnetic tape storage medium" (Gelb, Column 8 Line 20-62). Gelb in view of Basham discloses the claim limitation. Specifically note that, in the apparatus/system of Gelb in view of Basham storage characteristics are defined for different levels of capacity, access

mode, and performance (Gelb, Column 8 Line 20-62, i.e., *Storage classes and their service attributes*) and storage medium could be scaled as necessary employing the scaling method taught by Basham. Therefore, the method and system of Gelb in view of Basham further comprises defining a plurality of storage characteristics as storage characteristics that either require storage on optimally scaled storage medium or satisfy storage criteria for storing the dataset on optimally scaled storage medium.

Referring to claim 17, Gelb in view of Basham and further in view of Stickler teaches the limitation:

"wherein the method further comprises defining a plurality of storage characteristics as storage characteristics that require storage on maximum capacity magnetic tape storage medium" (Gelb, Column 8 Line 20-62). Gelb in view of Basham discloses the claim limitation. Specifically note that, in the apparatus/system of Gelb in view of Basham storage characteristics are defined for different levels of capacity, access mode, and performance (Gelb, Column 8 Line 20-62, i.e., *Storage classes and their service attributes*) and storage medium could be scaled as necessary employing the scaling method taught by Basham. Therefore, the method and system of Gelb in view of Basham further comprises defining a plurality of storage characteristics as storage characteristics that either require storage on optimally scaled storage medium or satisfy storage criteria for storing the dataset on optimally scaled storage medium.

Referring to claim 18, Gelb in view of Basham and further in view of Stickler teaches the limitation:

"wherein determining further comprises identifying storage characteristics that satisfy storage criteria for storing the dataset on optimally scaled magnetic tape storage medium (Gelb, Column 8 Line 20-62). Specifically note that, in the apparatus/system of Gelb in view of Basham storage characteristics are defined for different levels of capacity, access mode, and performance (Gelb, Column 8 Line 20-62, i.e., *Storage classes and their service attributes*) and storage medium could be scaled as necessary employing the scaling method taught by Basham. Therefore, the method and system of Gelb in view of Basham further comprises defining a plurality of storage characteristics as storage characteristics that either require storage on optimally scaled storage medium or satisfy storage criteria for storing the dataset on optimally scaled storage medium.

Referring to claim 19, Gelb in view of Basham and further in view of Stickler teaches the limitation:

"wherein determining further comprises identifying storage characteristics that satisfy storage criteria for storing the dataset on maximum capacity magnetic tape storage medium" (Gelb, Column 8 Line 20-62). Specifically note that, in the apparatus/system of Gelb in view of Basham storage characteristics are defined for different levels of capacity, access mode, and performance (Gelb, Column 8 Line 20-62, i.e., *Storage classes and their service attributes*) and storage medium could be scaled

as necessary employing the scaling method taught by Basham. Therefore, the method and system of Gelb in view of Basham further comprises defining a plurality of storage characteristics as storage characteristics that either require storage on optimally scaled storage medium or satisfy storage criteria for storing the dataset on optimally scaled storage medium.

Claim 20 is essentially the same as claim 5 except that it set forth the claimed invention as a computer readable storage medium to carry out a method for selecting storage medium scaling to improve data access performance rather than an apparatus for selecting storage media scaling to improve data access performance and rejected for the same reasons as applied hereinabove.

As per claim 21, Gelb in view of Basham and further in view of Stickler teaches the limitation:

"wherein the scaling module is further configured to select the scaling storage instructions using a pre-defined look-up table containing a plurality of datasets that determine whether the received dataset is to be scaled" (Gelb Column 4 Lines 57-62 in view of Basham. Gelb Column 4 Lines 57-62 recites *The classes and groups are first defined using interactive means by a so-called Storage Administrator. The defined classes and groups are assembled into* ***control tables*** *used to implicitly select data devices based on logical level specifications about the data set to receive an allocation of peripheral data storage space*).

Claim 23 is essentially the same as claim 21 except that it set forth the claimed invention as a computer readable storage medium to carry out a method for selecting storage medium scaling to improve data access performance rather than an apparatus for selecting storage media scaling to improve data access performance and rejected for the same reasons as applied hereinabove.

4. Claim 7, 10, 12,and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gelb in view of Basham and further in view of Stickler and further in view of Bergsten (U.S. Patent Application Publication Number 2003/0204672).

Referring to claim 7, Gelb in view of Basham and further in view of stickler as applied to 1 does not explicitly teach the limitations: “a network”, “coupled to a network”, and “from the controller over the network”.

Bergsten teaches the limitation:

“a network”, “coupled to a network”, and “from the controller over the network” (Figure 3:*Network Adapter 312* and Paragraphs 0032 and 0033). Bergsten teaches a system and means of an advanced storage controller which is attached to a network (Figure 3 and Paragraphs 0032 and 0033).

At the time the invention was made, it would have been obvious to person of ordinary skill in the art to add the feature of coupling a storage system controller to a network as taught by Bergsten to the system and apparatus of Gelb in view of Basham

so that the resultant system would be a system for scaling a storage medium to improve data access performance, the system comprising:

"a network configured to communicate data" (Bergsten, Figure 3: *Network Adapter 312* and Paragraphs 0032-0033);

"a storage controller coupled to the network" (Bergsten, Figure 3: *Network Adapter 312* and *Advanced Storage Controller 100* and Paragraphs 0032-0033);

"a magnetic storage device having a magnetic storage medium configured to store data" (Gelb, Figure 4: *Peripheral Data Storage 12*) "received from the controller over the network" (Bergsten, Figure 3: *Network Adapter 312* and *Advanced Storage Controller 100* and Paragraphs 0032-0033). The method and system of Basham accepts input data and scales tape capacity only because applications, which sent input data to the method and system of Basham, did not perform tape scaling in advance. In other words, it is inherent that the method and system of Basham accepts input data from applications that does not support scaling.);

"a host coupled to the network" (Gelb, Figure 4: *host processor 10* and Column 15 Lines 51-67 and Bergsten, Figure 3: *Network Adapter 312* and Paragraphs 0032-0033), "the host configured to exchange data with the controller" (Bergsten, Figure 3: *Advanced Storage Controller 100* and Paragraphs 0032-0033);

"an application operating within the host, the application configured to produce a dataset to be stored on the storage medium" (Gelb, Figure 4: *Application Programs 30* and Column 15 Lines 51-67);

"an identification module implemented in software for execution on a processor and configured to identify storage characteristics of the data set that indicate scaling is beneficial, wherein the storage characteristics comprise compaction, expiration dates and media interchange specifications" (Gelb in view of Basham and further in view of Stickler as applied to claim 1) and

"a scaling module configured to communicate with the application" (Gelb Figure 4: *Data Facility Product 32,* Figure 4: *Application Programs 30* and Column 15 Line s51-67) and "select a scaling storage instruction in response to storage criteria applied to storage characteristics of the dataset and communicate the selected instructions to the storage controller" (Gelb, Column 12 Lines 43-61, i.e., *storage classes* and Column 18 Line 47 through Column 19 Line 15, i.e., *compare the information*), "wherein the scaling storage instruction comprises an instruction to scale the magnetic tape storage medium to a predefined capacity for optimal data access performance" (Basham, Column 3 Lines 68-61, Column 11 Lines 25-30, Column 14 Lines 38-43, Column 14 Line 64 through Column 15 Line 6, and Column 15 Lines 16-39) and the storage controller stores the dataset on the magnetic tape storage device in response to the scaling storage instruction"(Gelb, Column 16 Lines 60 through Column 17 Lines 40).

One would have been motivated to do so because network attached storage systems (NAS) facilitates data distribution and improve data storage security, which is well known in the art and commonly implemented today.

Claim 10 is rejected on the same basis as claim 4. Note that the storing module (Gelb, Figure 4: *Data Facility Product 32*) would be performing the functions of the reception module, identification module, and scaling module of the claimed invention.

Referring to claim 12, Gelb in view of Basham and further in view of Stickler and further in view of Bergsten teaches the limitation:

"wherein the scaling module operates within the host" (Gelb, Figure 4*: host processor 10* and *Data Facility Product 32* and Column 15 Lines 51-67).

As per claim 22, Gelb in view of Basham and further in view of Stickler and further in view of Bergsten teaches the limitation:

"wherein the scaling module is further configured to select the storage instructions using a pre-defined look-up table containing a plurality of datasets that determine whether the received dataset is to be scaled" (Gelb Column 4 Lines 57-62 in view of Basham. Gelb Column 4 Lines 57-62 recites *The classes and groups are first defined using interactive means by a so-called Storage Administrator. The defined classes and groups are assembled into* ***control tables*** *used to implicitly select data devices based on logical level specifications about the data set to receive an allocation of peripheral data storage space*).

5. Claim 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gelb in view of Basham and further in view of Stickler and further in view of Bergsten

and further in view of Riedel et al. (hereinafter "Riedel", Erik Riedel, Garth Gibson and Christos Faloutsos, *Active Storage for Large-Scale Data Mining and Multimedia*, *Proceedings of the 24th VLDB Conference, New York, USA, 1998*).

Referring to claims 13, Gelb in view Basham and further in view of Stickler and further in view of Bergsten does not explicitly teach the limitation: "wherein the scaling module operates within the storage controller".

Riedel teaches the limitation:

""wherein the scaling module operates within the storage controller" (Page 1, Paragraph 2, Page 3 Figure 1, Column 1, and Paragraph 1 through Page 3 Column 2 Paragraph 1). Riedel teaches a system and method called *Active Storage* wherein application code is executed within the storage device controller/storage device (Page 1, Paragraph 2, i.e., *General purpose microcontrollers with 100-200 MHz processing speeds are already being incorporated into high-end commodity disk drives;* Page 3 Figure 1, i.e., *The Trend in Drive Electronics;* and Page 3, Column 1, Paragraph 1 through Page 3 Column 2 Paragraph 1 , i.e., *With Active Disks, excess computation power in storage devices is available directly for application-specific function in addition to supporting these existing storage specific optimizations.*).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add the feature of exploiting the processing power of embedded microprocessors inside disk controller/disk to execute application code as taught by Riedel to the system of Gelb in view of Basham and further in view of Bergsten so that, in the resultant system, the scaling module would operate either within

the storage controller or the storage device. One would have been motivated to do so in order to *exploit the processors embedded in individual storage device for some of the data-intensive applications common in data mining and multimedia databases* (Riedel et al., Page 1, Column 2, Line 2-6).

Referring to claim 14, Gelb in view of Basham and further in view of Stickler and further in view of Bergsten and further in view of Riedel teaches the limitation:

"wherein the scaling module operates within the magnetic tape storage device" (Page 1, Paragraph 2, Page 3 Figure 1, Column 1, and Paragraph 1 through Page 3 Column 2 Paragraph 1). Also refer to the action on claim 13 for this limitation.

6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gelb in view of Basham and further in view of Stickler and further in view of Bergsten and further in view of Mehlberg et al., (hereinafter "Mehlberg", U.S. Patent Application Publication Number 2003/0120379).

As per claim 24, Gelb in view of Basham and further in view of Stickler and further in view of Bergsten dose not explicitly teach the limitation: "comprising an accessor configured as a robotic arm with cartridge gripper and a bar code scanner mounted on the cartridge gripper, wherein the accessor transports the magnetic tape storage medium to the magnetic tape storage device".

On the other hand, Mehlberg teaches the limitation:

"comprising an accessor configured as a robotic arm" (Mehlberg, Paragraph 0004, i.e., *robotic arm*) "with cartridge gripper" (Paragraph 0026, i.e., *cartridge retrieval mechanism* and *a robotic hand or gripper*) and "a bar code scanner mounted on the cartridge gripper" (Paragraph 0028, i.e., *bar code scanned by the barcode scanner*), wherein the accessor transports the magnetic tape storage medium to the magnetic tape storage device" (Figure 1, i.e., Tape Library and Paragraph 0011, i.e., *tape library)*.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add the feature of using a robotic arm/gripper to the system of Gelb in view of Basham and further in view of Stickler and further in view of Bergsten so that the resultant system would comprise a robotic arm/gripper which retrieves tape cartridges. On would have been motivated to so in order to automatically load data cartridge, which is a well-known practice in the art.

(10) Response to Arguments

Referring to rejection of claims 1, 4, 5, 15-21, and 23 under 35 U.S.C. 103(a), Appellant argued that *" Appellants respectfully reaffirm the arguments raised against the rejection of claims 1, 4, 5, 15-21, and 23 under 35 U.S.C. 103(a) set forth in the response mailed April 21, 2008"* (Appellant's argument, page 12 third paragraph).

Applicant's response filed on November 20, 2007, to which Examiner made a response in the Final Office Action issued on February 21, 2008, stated that *neither Gelb, Basham, nor Strickler disclose selecting a scaling instruction for a dataset that was to be stored with storage instruction that does not direct that the dataset is stored*

with scaling" (Applicant's argument, page 11 First Paragraph, filed on November 20, 2007).

Examiner respectfully disagrees all of the allegations as argued. Examiner, in his previous office action, gave detail explanation of claimed limitation and pointed out exact locations in the cited prior art. Examiner is entitled to give claim limitations their broadest reasonable interpretation in light of the specification. See MPEP 2111 [R-1] Interpretation of Claims-Broadest Reasonable Interpretation.

During patent examination, the pending claims must be 'given the broadest reasonable interpretation consistent with the specification.' Applicant always has the opportunity to amend the claims during prosecution and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 162 USPQ 541,550-51 (CCPA 1969).

In response it is pointed out that Gelb in view of Basham and further in view of Strickler teaches said feature as follows: "**a reception module implemented in software stored on a memory device for execution on a processor and configured to receive a dataset for storage on a magnetic tape storage medium**" (Gelb, Figure 4: *Data Facility Product 32, Peripheral Data Storage 12;* Gelb, Column 18 Line 47 through Column 19 Line 59; Gelb, Column 12 Lines 64 through Column 13 Lines 15-23; and Column 16 Lines 65-68) "**with a storage instruction that does not direct that the dataset is stored with scaling**" (Gelb, Column 13 Lines 19-22, i.e., */*EXCLUDE SYSTEM DATA SETS THAT SHOULD NOT BE SMS-*

MANAGED; Gelb, Column 19, Lines 1-10, i.e., *One of the options in the storage class selection machine process, as indicated by arrow 143, is to assign the allocation to a* ***"non-SMS managed"*** *portion of the data processing system. That is, the storage management system (SMS) which uses the storage and management classes is not to manage the data set which is the subject of the current class selection request. This exclusion process is at the comment "define non SMS-managed data sets" within the listing STORAGE CLASS ACS ROUTINE. In the example, the system data sets (SYS.**) having a DSN including the exclusion parameter for being directed away from the controls of the present invention is based upon parsing the DSN. Therefore, data classes are selectable for data sets to be managed by operation of the present invention or with other types of controls;* Particularly not that "non-SMS managed" option defines that the dataset being selected is not to be scaled, that is, not directing that the dataset is stored with scaling); "**a scaling module implemented in software stored on the memory device for execution on a processor and configured to select a storage scaling instruction in response to storage criteria applied to the storage characteristics" (**Basham, Column 3 Lines 68-61, Column 11 Lines 25-30, Basham, Column 14 Lines 38-43, Column 14 Line 64 through Column 15 Line 6, and Column 15 Lines 16-39. Particularly note Column 3 Lines 68-61 which recites that *Until the tape is filled, future data may be stored by creating additional partitions as described above, each partition having a variable size appropriate to the amount of data stored therein;* Basham, Column 11 Lines 25-30 which recites that *an application may require assorted sizes of fixed-size partitions, each partition including one or more*

adjacent segments, as required by the application; and Basham, Column 11 Lines 33-36 which recites that *As an example, partition sizes may be established by receiving user input (now shown) prior to tasks 502 and 604*) and ""wherein storage characteristics comprise compaction" (Basham et al., Column 5 Lines 55-64, i.e., *The controller 204 manages the exchange of user data between the tape medium 206 and the host 202. The controller 204 also handles other tasks associated with storage and retrieval of user data, such as formatting, error checking,* ***compaction****, and other tasks that may be advantageously invisible to the host 202* **) "that indicate scaling is beneficial"** (Gelb, Column 3 Line 65 through Column 4 Line 11, i.e., *The patent does teach the concept of a group of storage volumes (virtual volumes in the tape library) which are scanned for finding a best suitable storage volume for storing a data set to be stored*) and "**communicate the selected scaling instructions to a storage controller, wherein the storage instruction comprises an instruction to scale the magnetic tape storage medium to a predetermined capacity for optimal data access performance**" (Basham, Column 3 Lines 68-61, Column 11 Lines 25-30, Basham, Column 14 Lines 38-43, Column 14 Line 64 through Column 15 Line 6, and Column 15 Lines 16-39. Particularly note Column 3 Lines 68-61 which recites that *Until the tape is filled, future data may be stored by creating additional partitions as described above, each partition having a variable size appropriate to the amount of data stored therein;* Basham, Column 11 Lines 25-30 which recites that *an application may require assorted sizes of fixed-size partitions, each partition including one or more adjacent*

segments, as required by the application; and Basham, Column 11 Lines 33-36 which recites that *As an example, partition sizes may be established by receiving user input (now shown) prior to tasks 502 and 604*) and ""wherein storage characteristics comprise compaction" (Basham et al., Column 5 Lines 55-64, i.e., *The controller 204 manages the exchange of user data between the tape medium 206 and the host 202. The controller 204 also handles other tasks associated with storage and retrieval of user data, such as formatting, error checking,* ***compaction****, and other tasks that may be advantageously invisible to the host 202.*). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the apparatus of Gelb to add the feature of storage medium scaling as taught by Basham et al., to the apparatus of Gelb for selecting storage media to improve data access performance so that the resultant apparatus would constitute an apparatus for selecting storage media scaling to improve data access performance, wherein the storing module (Gelb, Figure 4: *Data Facility Product 32*) would be performing the functions of the reception module, identification module, and scaling module of the claimed invention. One would have been motivated to do so in order to *more efficiently and conveniently locate, read, write, and update data stored on magnetic tape media* (Basham, Column 2, Line 47-49).

With respect to rejection of claims 7, 10, 12, and 22, Appellant argued that *"Appellants maintain the position that Gelb, Basham, Stickler, and Bergsten do not each element of independent claim 7. As discussed above for claim 1, the combination of Gelb and Basham cited by the Examiner do not disclose selecting a scaling storage instruction in response to storage criteria applied to storage characteristics for a dataset*

received with a storage instruction that does not direct that the dataset is stored with scaling" (Appellant's argument, page 18, last paragraph).

In response it is pointed out that Examiner affirms the fact that Gelb in view of Basham and further in view of Stickler teaches each and every limitation of claim 1 (as cited above), including the limitation "*selecting a scaling storage instruction in response to storage criteria applied to storage characteristics for a dataset received with a storage instruction that does not direct that the dataset is stored with scaling".*

Referring to rejection of claims 13 and 14 under 35 U.S.C. 103(a), Appellant argued that *"Appellants respectfully reaffirm the arguments raised against the rejection of claims 13 and 14 under 35 U.S.C. 103(a) set forth in the response mailed April 21, 2008, and submit that claims 13 and 14 allowable as depending from allowable claim 7 as discussed above"* (Appellant's argument, page 19, last paragraph).

In response it is pointed out that claims 13 and 14 are NOT allowable because (1) said claims depended on rejected claim 7 and (2) said claims are obvious over the combination of Gelb in view of Basham and further in view of Stickler and further in view of Bergsten and further in view of Riedel et al. (Erik Riedel, Garth Gibson and Christos Faloutsos, *Active Storage for Large-Scale Data Mining and Multimedia*, *Proceedings of the 24th VLDB Conference, New York, USA, 1998*).

Referring to rejection of claim 24 under 35 U.S.C. 103(a), Appellant argued that *"Appellants respectfully reaffirm the arguments raised against the rejection of claim 24 and 14 under 35 U.S.C. 103(a) set forth in the response mailed April 21, 2008, and submit that claims 13 and 14 allowable as depending from allowable claim 7 as discussed above"* (Appellant's argument, page 20, last paragraph)

In response it is pointed out that claim 24 is NOT allowable because (1) said claims depended on rejected claim 7 and (2) said claims are obvious over the combination of Gelb in view of Basham and further in view of Stickler and further in view of Bergsten and further in view of Mehlberg et al., (U.S. Patent Application Publication Number 2003/0120379).

In conclusion, it is herewith repeated that claims 1, 4, 5, 7, 10, and 12-24 under 35 U.S.C. 103(a) are unpatentable over the cited prior art. For the above reasons, it is believed that the rejections should be sustained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the Examiner in the Related Appeals and Interferences section of this examiner's answer.

Respectfully Submitted,

/dennis myint/
Dennis Myint
Examiner, AU-2162

Conference:

/John Breene/
Supervisory Patent Examiner, Art Unit 2162

/Tony Mahmoudi/
Supervisory Patent Examiner, Art Unit 2169